



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,785	10/16/2001	Judith Reinhard	Q65015	6194

7590 05/14/2004

Sughrue Mion Zinn Macpeak & Seas
2100 Pennsylvania Avenue NW
Washington, DC 20037-3213

EXAMINER

PAK, JOHN D

ART UNIT PAPER NUMBER

1616

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,785

Applicant(s)

REINHARD ET AL.

Examiner

JOHN D PAK

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-34 and 56-67 is/are pending in the application.
- 4a) Of the above claim(s) 19-21 and 65-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-34 and 56-64 is/are rejected.
- 7) ☒ Claim(s) 64 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/26/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Claims 19-34 and 56-67 are pending in this application. The Examiner notes with appreciation the submitted copies of several references that were missing from the record of this application. Only the references that were not previously considered are initialed. Previously considered references, which were previously initialed in original copies of the PTO-1449, are crossed out to avoid duplicate listing on a patent publication, when and if appropriate.

Claims 19-21 and 65-67 stand withdrawn from further consideration as being directed to non-elected subject matter. Claims 22-34 and 56-64 will presently be examined to the extent that they read on the elected subject matter of record. See the lack of unity requirement of 4/10/2003 and applicant's election of 5/12/2003.

Claims 64 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 64, which depends on independent claim 22, recites quinhydrone, but that compound is not encompassed by the formula of claim 22. Applicant should check the structures of other claim-recited formulas to ensure that all other specifically recited compounds are encompassed by the formulas of independent claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1616

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-27, 56-61, 63-64 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 58-157703.

JP 58-157703 explicitly discloses two types of phenyl-based compounds that contain two OR groups (OR^1 and OR^2), each of which R^1 and R^2 may be H or methyl and a third substituent R^3 that is H or lower alkyl. See first page, column 1. See also the English abstract, JPAB abstract, JP 358157703A. The total number of compounds that result is small, and the encompassed compounds read on compounds set forth in applicant's claims except for compounds embodied in applicant's claim 62. The compounds disclosed in the cited document are disclosed as active constituent of termite controlling agents. The compounds cause abnormality in the antennae of the termites, loss of living functions, damages in the legs, or reduction in the sensitivity to odor or heat. 0.1-20% of the phenyl-based compound concentration is taught (second page of the document, left column, the paragraph immediately under "- 3 -"). In a filter paper weighing 2g, 11 mg of the phenyl-based active ingredient compound (hydroquinone exemplified) was applied (third page of the document, left column, lines 5-13). This is approximately 0.5 wt% of the phenyl-based compound ($11 \div 2011 =$ about 0.5 wt%).

Although some of applicant's claim-recited features are not expressly stated in the cited document, the claims are nonetheless anticipated for the reasons set forth below.

Amount that is effective in stimulating feeding activity in termites

A thorough review of this claim feature was made. Applicant's specification does not set forth the exact metes and bounds of this feature. Apparently, any amount that is effective for stimulating feeding activity will do. On specification page 17, first paragraph, applicant admits that certain synthetic lures elicited no feeding stimulation **except** "at unnaturally high concentrations where they probably served a nutritional role as food supplement." Therefore, applicant is on record as having acknowledged that feeding stimulation from concentrations higher than trace levels is still regarded as feeding stimulation.

The cited document specifies that the concentration of the phenyl-based compounds is 0.1-20 wt%. Application to a paper substrate is 0.5 wt%. It is the Examiner's position that this amount would have necessarily produced the same feeding activity stimulation. The same compounds are used. The same substrate, paper (note applicant's 27), is used. All that applicant's claims require is feeding activity stimulation; applicant's specification acknowledges increase of feeding activity from nutritional role of the test compounds; and applicant's disclosure does not expressly set forth any concrete concentrations or amounts for the metes and bounds of the effective

amount claim feature. Therefore, it is the Examiner's position that the amount used in the cited document is an amount that is encompassed by applicant's claim language.

Claim 24: Provide a food source + provide compound of formula I
at effective feeding stimulating amount

Claim 24 is written as a method of attracting termites to a locus. The steps are outline above. However, the cited document sets forth the same steps (amount issue is discussed above). The food source is the treated paper substrate. The compounds are the same. The amounts are the same. Applicant's claim language is readable on the steps explicitly disclosed by the cited reference.

Claims 25-27: Bait

Similar to above, the food source is the paper substrate. The same compound is applied to the same substrate in the cited document. Given the discussion above regarding the effective amount, the bait invention is anticipated.

For these reasons, the above rejected claims are anticipated. Applicant's remarks relative to the cited document and this ground of rejection have been given full consideration but they were deemed unpersuasive. Applicant argues that the 0.1-20 wt% disclosed by the cited document is "above quantities in which the compounds of the present invention exhibit pheromonal activity as a feeding stimulant in termites." The trouble is, nowhere in the claims is there any requirement that the amount should

be "pheromonal." Moreover, even if such a claim limitation were recited, there is no specific metes and bounds for that term in the originally filed disclosure. If applicant intends picomolar or nanomolar concentrations, applicant should put that into the claims. If that is indeed the concentration level intended, why not put that into the claims instead of arguing that the claims are to be interpreted that way? At the present time, the Examiner disagrees that the claims must be interpreted that way. Applicant has shown that "feeding stimulation" can occur at higher levels of concentrations (specification page 17, lines 4-5), and the claims only require "stimulating feeding activity." The Examiner maintains that feeding activity is stimulated by cellulose substrate and the applied inventive compounds.

Claims 22-29, 33-34, 56-62, 64 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 60-56903.

JP 60-56903 explicitly discloses hydroxybenzene compounds as having termite controlling properties. See first page of the document, left column; see also the English abstract, Chemical Abstracts 103:33511. The 1,2,3-substituted $-OR_1$, $-OR_2$ and $-OR_3$, respectively, can be H or CH_3 (first page of the document, left column, second paragraph). 1,2,3-trimethoxybenzene is exemplified (third page of the document, right column, Example 4). 0.1-20 wt% concentration is taught (second page, right column, lines 6-9). 200 g/m² of wood is exemplified (third page, last paragraph). Use with other

pesticides such as phosphorus-based pesticides, carbamates and organochlorine pesticides are taught (second page, left column, lines 26-32).

Although some of applicant's claim-recited features are not expressly stated in the cited document, the claims are nonetheless anticipated for the reasons set forth below.

Amount that is effective in stimulating feeding activity in termites

A thorough review of this claim feature was made. Applicant's specification does not set forth the exact metes and bounds of this feature. Apparently, any amount that is effective for stimulating feeding activity will do. On specification page 17, first paragraph, applicant admits that certain synthetic lures elicited no feeding stimulation **except** "at unnaturally high concentrations where they probably served a nutritional role as food supplement." Therefore, applicant is on record as having acknowledged that feeding stimulation from concentrations higher than trace levels is still regarded as feeding stimulation.

The cited document specifies that the concentration of the hydroxybenzenes is 0.1-20 wt%. Application to wood is exemplified for 200 g/m². It is the Examiner's position that this amount would have necessarily produced the same feeding activity stimulation. The same compounds are used. The same substrate, wood (note applicant's 27), is used. All that applicant's claims require is feeding activity stimulation; applicant's specification acknowledges increase of feeding activity from nutritional role

of the test compounds; and applicant's disclosure does not expressly set forth any concrete concentrations or amounts for the metes and bounds of the effective amount claim feature. Therefore, it is the Examiner's position that the amount used in the cited document is an amount that is encompassed by applicant's claim language.

Claim 24: Provide a food source + provide compound of formula I
at effective feeding stimulating amount

Claim 24 is written as a method of attracting termites to a locus. The steps are outline above. However, the cited document sets forth the same steps (amount issue is discussed above). The food source is the treated wood substrate. The compounds are the same. The amounts are the same. Applicant's claim language is readable on the steps explicitly disclosed by the cited reference.

Claims 25-29 & 33-34: Bait claims and Termiticide composition claims

Similar to above, the food source is the wood substrate. The additional termiticide is the phosphorus-based pesticides, carbamates and organochlorine pesticides, which are taught to be used together with the hydroxybenzenes. The fact that these pesticides will kill the termites encompasses their "insect growth regulator" or "chitin synthesis inhibitor" activity.

For these reasons, the claims are anticipated.

Claims 25-27 stand rejected under 35 U.S.C. 102(b) as being anticipated by Springer (US 4,045,554) for the reasons of record (see pages 6-7 of the previous Office Action, mailed on 7/29/03).

Applicant's remarks relative to the cited document and this ground of rejection have been given full consideration but they were deemed unpersuasive. Applicant argues that the 0.35% hydroquinone disclosed by the cited document is too high. However, nowhere in the claims is there any requirement that the amount should be something less than feeding activity stimulating achieved by nutritional effect. If applicant intends picomolar or nanomolar concentrations, applicant should put that into the claims. If that is indeed the concentration level intended, why not put that into the claims instead of arguing that the claims are to be interpreted that way? At the present time, the Examiner disagrees that the claims must be interpreted that way. Applicant has shown that "feeding stimulation" can occur at higher levels of concentrations (specification page 17, lines 4-5), and the claims only require "stimulating feeding activity." The Examiner maintains that feeding activity is stimulated by cellulose substrate and the applied inventive compounds. The claimed bait is defined as a food source and the inventive compounds. The cited document clearly discloses the same combination of cellulose substrate + inventive compound. The claims are anticipated.

Claims 22-26, 30-31, 56-61 and 63-64 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 3-112903.

JP 3-112903 explicitly discloses the use of hydroquinone and/or catechol + cellulose in a termite trail-marking pheromone composition. Prevention and control of termites are disclosed. See the English abstract, Derwent Abstract 1991-183187. Further, on the third page of the document, fifth paragraph, 1-10 wt% of stabilizer such as hydroquinone and/or catechol is taught, based on the amount of the pheromone. See applicant's translation, page 18 of applicant's 1/26/04 reply. Use of mixture of hydroquinone and catechol meets applicant's claim 30; and the use of pheromone meets applicant's claim 31.

Applicant's remarks relative to the cited document and this ground of rejection have been given full consideration but they were deemed unpersuasive. Applicant argues that the 1-10 wt% hydroquinone or catechol, based on the amount of the pheromone, as disclosed by the cited document is too high. However, if applicant intends picomolar or nanomolar concentrations, applicant should put that into the claims. If that is indeed the concentration level intended, why not put that into the claims instead of arguing that the claims are to be interpreted that way? At the present time, the Examiner disagrees that the claims must be interpreted that way. Applicant has shown that "feeding stimulation" can occur at higher levels of concentrations (specification page 17, lines 4-5), and the claims only require "stimulating feeding

activity.” The Examiner maintains that feeding activity is stimulated by cellulose additive and the applied inventive compounds. The claimed bait is defined as a food source and the inventive compounds. The cited document clearly discloses the same combination of cellulose substrate + inventive compound. Applicant’s argument that feeding stimulation could not have been obtained because of an “inedible matrix” is not persuasive. The matrix is made with cellulose ester and reproduced cellulose (see the Derwent abstract). Such matrix is indeed edible by termites. The claims are thereby anticipated.

Claims 22-29, 31, 56-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Peterson (US 5,756,114).

Peterson explicitly discloses impregnating a cellulose containing material such as a wooden stake (column 6, lines 20-21) with a termite control composition that contains at least two chemical attractants + termite pesticide and exposing the impregnated cellulose material to termites (column 3, lines 8-16). The at least two termite attractants are aliphatic attractants and aromatic attractants such as 2,4-dihydroxybenzoic acid, 3,4-dihydroxybenzoic acid, and 4-hydroxy-3-methoxybenzoic acid (column 5, Table II). It is noted that these attractants fall within the chemical formula I in applicant’s claims. As for effective amounts, see Example 1 on column 7,

wherein 3,4-hydroxybenzoic acid is used at 15 ppm (about 0.0015 wt%) in admixture with n-hexanoic acid (aggregation attractant) and dapson (termiticide).

As fully discussed in previous grounds of rejections, applicant's effective amount language encompasses from trace amounts in the picomolar range to major amounts that serve nutritional functions. Here, Peterson's amount is in the low 15 ppm range. Given applicant's scope, 15 ppm is within applicant's inventive effective amount range, so such an amount would necessarily possess the function of stimulating feeding activity in termites because the same compound applied to the same substrate at the same amount would be expected to deliver the same properties. The termiticide would kill the termites, so it would necessarily regulate growth (to death) and inhibit chitin synthesis (stopping it altogether). All of the claimed features are plainly shown to be anticipated.

Claims 25-26, 28-30, 32-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto et al. (US 5,151,428).

Sakamoto et al. explicitly disclose an insecticide with termiticidal activity as a poison bait in combination with polysaccharides including cellulose derivatives, starch powders, gum arabic, alginic acid, and a stabilizer such as BHA, which is a mixture of 2-t-butyl 4-methoxyphenol and 3-t-butyl 4-methoxyphenol. See column 1, lines 18-50; column 28, lines 13-14; column 29, lines 25, 57-60, 63-66; column 30, lines 20-25.

Although the amount of BHA in a poison bait is not expressly set forth, it is an amount for stabilizing the composition. Given applicant's scope of trace levels of phenol derivatives, in view of Sakamoto's use of up to 10 parts by weight of stabilizing agent in comparison to 1-75 parts by weight of the active termiticide in a different formulation type (column 30, lines 28-38), it is the Examiner's position that stabilizing effective amount in Sakamoto's bait is at least within or greater than the trace levels that are minimally inside applicant's effective amount scope. Having such amount in the presence of polysaccharides such as cellulose derivatives and starch powders would necessarily provide the feeding activity stimulating effect. The termiticide would kill the termites, so it would necessarily regulate growth (to death) and inhibit chitin synthesis (stopping it altogether). Presence of BHA, which is a mixture of two compounds, meets both the formula I feature and additional antioxidant feature. The claims are thereby anticipated.

Claims 25-31, 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Omata et al. (US 5,024,832).

Omata et al. explicitly disclose applying a composition containing termite pheromone + vanillic acid to a base material such as cardboard and wood chips, in combination with a termiticide and stabilizer for the pheromone such as hydroquinone and catechol (column 3, lines 51-56; column 4, lines 59-63; column 5, lines 9-10,18-24

and 25-31). It is noted that vanillic acid meets applicant's formula I. An exemplified amount of vanillic acid is 0.01 ppm (column 5, lines 63-67).

Although the amount of vanillic acid is not expressly stated as an amount that would stimulate feeding activity in termites, the same effect would necessarily have been delivered by Omata's composition. Given applicant's scope of trace levels of phenol derivatives, in view of Omata's use of up to 0.01 ppm vanillic acid, it is the Examiner's position that such amount is at least within or greater than the trace levels that are minimally inside applicant's effective amount scope. Having such amount in the presence of cellulose materials such as cardboard or wood chips would necessarily provide the feeding activity stimulating effect. The termiticide would kill the termites, so it would necessarily regulate growth (to death) and inhibit chitin synthesis (stopping it altogether). Presence of hydroquinone or catechol would not only provide further feeding activity stimulating effect, but it would also serve antioxidant functions. The claims are thereby anticipated.

Ground of rejection based on Meyer et al. is hereby withdrawn in view of cancellation of all previously rejected claims.

Ground of rejection based on Chemical Abstracts 77:44349 is hereby withdrawn in view of applicant's arguments concerning the layer of polymer that may be inedible to termites.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620, effective February 3, 2004**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Thurman Page, can be reached on (571)272-0602, effective February 3, 2004.

The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

A handwritten signature in black ink, appearing to read 'John Pak', with a stylized, flowing script.

JOHN PAK
PRIMARY EXAMINER
GROUP 1600